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Horticultural Leaves

—° AND °—


HAND-BOOK

— OF —

SMALL FRUIT.

CHICAGO, ILL.

DEDICATION.

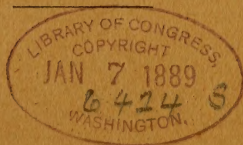


Believing that the cultivation of small fruits will not reach its highest excellence until the women of our country study and practice horticulture, and recognizing the fact, that one young lady at least fulfills the requisite qualifications for this work,

TO MISS LOUISA MCSHANE,
An expert in grafting and budding fruit-trees,
These Records are inscribed
BY THE AUTHOR.

HAND BOOK
OF
SMALL FRUIT

PUBLISHED BY
FRANCIS B. ABBOTT,
CHICAGO, ILL.



PREFACE.

In cultivating small fruits for several years, I have become aware of the fact that very few people know how to prepare the soil with fertilizers, propagate and cultivate with the skill necessary to make it a complete success. I have endeavored to state in as few words as possible, just what to do, leaving out all unnecessary talk about the matter, which would only confuse the amateur horticulturist. I firmly believe that horticulture will not be successful in a high degree, until the women take a leading part in this great branch of farm and garden culture. As a general rule, men are engaged in other pursuits and business cares, and do not have the time to spare. I believe the time is near when a change will be made, and the community become awake to the importance of the foregoing statements.

THE AUTHOR.

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A lady at Austin, Ill., said to me as I was unloading trees and small fruits:

“If I knew how to manage these fruit trees and grape-vines, I could supply our table with all the small fruit we want.” I replied that I should soon publish what I shall call, “Abbott’s Horticultural Leaves,” which would supply a long-felt want. I meet with many ladies of refinement, who delight to work amid the small fruits and flowers of the garden. In the Great West, and in fact, there are thousands all over our great land who feel the same interest in this subject as this Austin lady. I shall offer the Leaves to the public at a moderate price, when we consider their value to those unlearned in the cultivation of small fruits. Hoping that these lines will meet with approbation from the public, I will further say that any man who supplies or aids his neighbors in procuring a plenty of small fruits, confers a great blessing upon the community.

How to Cultivate Fruit Trees.

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Management of fruit trees after being taken from the Nursery.

A table showing the number of trees required to plant an acre, from 1 to 50 feet apart.

Distances at which trees should be planted.

How to make a Barren Fruit Tree bear.

Cuts of Fruit.

How to Cultivate Currants.

CONTENTS.

How to transplant.

How to propagate from slips.

How to prepare the soil for the slips.

How to put roots on the slips the same year that they grow.

How to raise Currant trees; a single stalk; suckers never grow from the roots, nor limbs on the trunk of the tree, any lower than you choose to have them.

How and when to trim currant bushes.

Currant Enemies and how to destroy them.

How to make Spiced Currants.

How to make Currant Preserve. (A new way).

Cuts of Fruit.

How to Cultivate Gooseberries.

CONTENTS.

How to transplant.

How to propagate from slips.

How to prepare the soil for slips.

How to put roots on the slips.

How to raise Gooseberry trees which never grow suckers from the roots.

How to prevent Mildew upon Gooseberries. (This item alone is worth more than you pay for the Gooseberry Leaf.)

Cut of Large English Gooseberries.

How to Cultivate Grapes.

CONTENTS.

- How to transplant.
- What place is most favorable for raising Grapes.
- What season is best for planting Grapes.
- What season to prune Grapes.
- How to prune Grape-vines.
- How to trellis Grape-vines.
- How to prevent Mildew.
- What enemies have Grapes.
- How to destroy them.
- Cuts of Fruit of the different kinds of Grapes.

How to Cultivate Raspberries.

CONTENTS.

- Preparation of the soil and fertilizers.
- Plants and planting.
- Propagation
- Culture of the Fruit.
- What varieties to plant.
- Cuts of Fruits and Plants.

How to Cultivate Strawberries.

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- Soil and Situation.
- Preparation of the soil.
- Where to get Plants.
- What kinds to plant.
- How to plant.
- Mode of culture
- Cuts of Fruits.



ABBOTT'S

Horticultural Leaves

FRUIT TREES.



CHICAGO, ILL.

MANAGEMENT OF FRUIT TREES AFTER TAKEN FROM THE NURSERY.

The roots of trees should be kept moist during transportation; then cover with moist earth, until set in orchard. Plow the ground deep; then plow a deep, wide furrow where each row is to stand; throw out the earth until you have a hole sufficiently large to receive the roots as they naturally grew in a row. Wet the roots, and then use the hand in putting in fine earth around them. Be careful to place all fibrous roots in their natural position; fill up, pressing down with the foot; then mulch with coarse manure. On prairie or level ground, plow the furrows toward the trees until you get a ditch eighteen inches deep between the rows. Cultivate the ground well until the middle of July. Cultivation after that time produces too late a growth, leaving the trees in unripe condition at the setting in of winter.

Autumn is strongly urged as the best time to get trees, which, if properly laid in, are even safer than if left standing. To winter trees perfectly, dig a ditch in dry soil, eighteen inches deep, with the earth banked up on the sloping side, against which the trees are to be laid; then sift fine earth among the roots, watering if soil and root be dry. Cover the tops with a few inches of earth outside, to exclude mice and rabbits.

CHERRIES.

Early Richmond.—An old European sort. The most valuable for the West and Northwest. It begins to color about the 20th of May, and may then be used for tarts, while it will continue to grow in size and color, losing its acidity; will

remain on the tree in dry seasons until July. Free, hardy and productive, and by far the best for the West and Northwest.

Table showing the number of trees required to plant an acre, from 1 to 50 feet apart.

FEET.	TREES.	FEET.	TREES.	FEET.	TREES.	FEET.	TREES.
1.....	43,560	14.....	222	26.....	64	38.....	30
2.....	10,890	15.....	193	27.....	59	39.....	28
3.....	4,840	16.....	170	28.....	55	40.....	27
4.....	2,722	17.....	150	29.....	51	41.....	26
5.....	1,742	18.....	130	30.....	48	42.....	24
6.....	1,210	19.....	120	31.....	45	43.....	23
7.....	889	20.....	108	32.....	43	44.....	22
8.....	680	21.....	98	33.....	40	45.....	21
9.....	537	22.....	90	34.....	37	46.....	20
10.....	335	23.....	82	35.....	35	47.....	19
11.....	360	24.....	75	36.....	32	48.....	18
12.....	302	25.....	69	37.....	31	49.....	18
13.....	257	50.....	17

DISTANCES AT WHICH TREES SHOULD BE PLANTED.

Standard Apples,	- - - -	18 to 33 feet.
Pears and Cherries,	- - - -	18 to 20 "
Peaches and Plums,	- - - -	15 to 20 "
Dwarf Pears,	- - - -	10 to 12 "
Dwarf Cherries,	- - - -	10 to 12 "
Dwarf Apples,	- - - -	8 to 15 "
Currants, Raspberries,	- - - -	4 to 5 "
Black Currants,	- - - -	6 feet
Red Currants,	- - - -	3 "
Raspberries and Blackberries,		
Garden Culture,	- - - -	3 "
Field Culture,	- - - -	3 x 4 "
Strawberries, garden culture,	- - - -	1 x 2 "
Strawberries, field culture,	- - - -	1 x 3 "



To Make a Barren Fruit Tree Bear.

Trench in a half circle as shown by the cut, representing a tree with a semicircular trench; sever all of the large roots, leaving the small fine ones; dig the trench wide enough to make it convenient to reach under and cut the downward roots. First dig the trench around, then commence two feet below the surface of the ground; dig under, cutting off those running below. I fill up this trench with two-thirds soil and one-third manure. I utilize the space to put in currant, gooseberry and other cuttings. Repeat this operation with the other half of the tree three years later. For a tree eight or ten years old, trench two and a half feet from the trunk. For a tree twelve to fifteen years, make the trench four feet distant. Four years from the first root-pruning, extend the circle two feet further away and trench again. This operation will cause an unproductive tree to bear profusely. This experiment has been tried on the apple and pear with great success. The best time to do this work is the last of August and the first of September, when growth has nearly ceased, and the leaves are upon the trees, and the bloom buds are forming for the following year.

ANOTHER SUCCESSFUL EXPERIMENT.

I have a pear tree, at thirteen years of age it had borne me no pears; I said to a friend, "What is the reason that my pear tree yields no fruit?" His reply was: "It needs iron;" being a machinist I brought out of the machine shop some iron turnings, and with a hoe mixed them thoroughly with the soil around the tree. The next year I had pears. A lady friend of our family had a cousin, a lady, who was the owner of a barren pear tree; she felt very indignant because it yielded no fruit. She took a hammer and nails, and with great energy let the pear tree know that she was not to be trifled with in that manner. The pear tree took the hint from the severe treatment it received at her hands, for she drove the nails into it without mercy.. It behaved splendidly after that, and gave an abundant yield of fruit. A gentleman of my acquaintance tried the same experiment on a cherry tree with the same success.

APPLES.

My customers often ask, What kind of apples shall I buy? I will mention a few:

Summer.—Red Astrachan, Duchess of Oldenburg, Early Harvest.

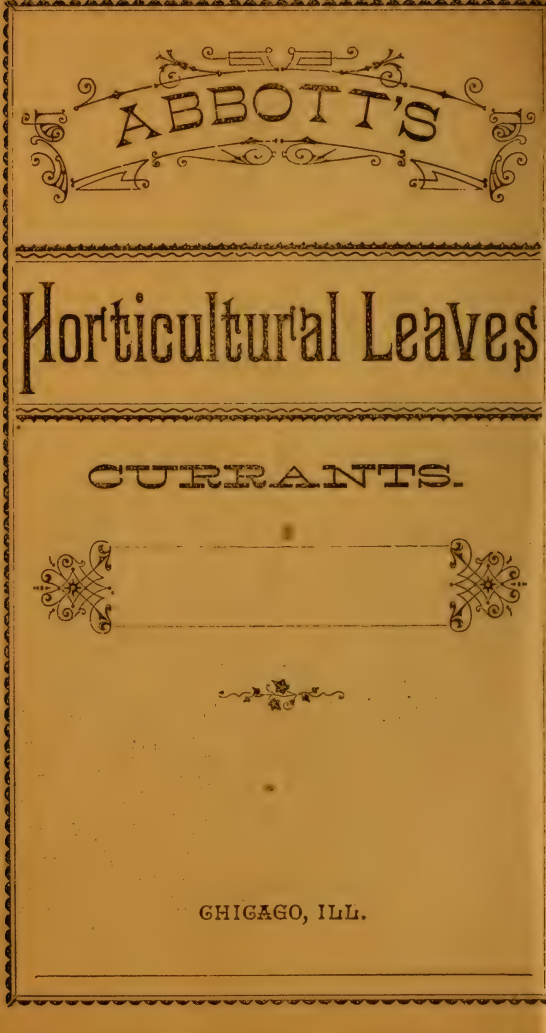
Fall.—Snow, Maiden Blush, Talman Sweet.

Winter.—Ben Davis, Rawles' Janet, Mann, Willow Twig.



Photo. by Wilcox 75 E. Madison.

Transcendant Crab Apples



ABBOTT'S

Horticultural Leaves

CURRENTS.



CHICAGO, ILL.

How to Cultivate Currants.

HOW TO TRANSPLANT.

Throw out the earth until you have a hole sufficiently large to receive the roots as they naturally grew; see that you have some good soil at the bottom of the hole; place your bush in position, sift on good fine soil with your coal sieve if you have no other; see that the fine dirt is packed thoroughly among the roots; turn in a pail of water, so as to bed the soil perfectly around the roots; throw in more soil, and near the top of the ground mix manure with the soil, and press down the earth around the bush.

HOW TO PROPAGATE FROM SLIPS.

Cut the slips into eight-inch pieces, leave one bud out of the ground, sprinkle a little light manure over them to protect them through the winter.

TO PREPARE THE SOIL FOR THE SLIPS.

I dig a trench two and a half or three feet wide, and fifteen to eighteen inches deep, throw out the soil, then put in a layer of manure (good cow's manure if you can get it), then a layer of soil, alternate layers of each, and fill up the trench; then fork it over two or three times, to thoroughly mix them together. Take Abbott's Slip Transplanter, and put them in all of the same depth; the Slip Transplanter is much larger than the slip, so that it will drop in very freely; throw common mortar-sand or very fine soil upon the bed; then with a watering-pot with the sprinkler off, holding it about four feet from the ground, pour the water and wash the sand into the holes around the slips, and fill them solid.

TO PUT ROOTS ON THE SLIPS THE SAME YEAR THAT THEY GROW.

I take a piece of tin or sheet-iron, bend it up like a tube, put it around the main stalks of the bush, leaving a half-inch space between the old branches and the tin tube to let the air circulate and prevent roots from growing out of the said branches, then bank up six inches or more, and in the late fall cut off the slips with good roots upon them.

ANOTHER METHOD.

Cut off the slips about the middle of August, strip the leaves, cut off the large end square with a very sharp knife, so as to not injure the bark. Then use the Slip Transplanter as before, and the sap will go down and heal over the end, and the fine roots will grow out of the part under ground.

How to Raise Currant Trees.

Take the largest and most vigorous slips about two feet long, cut out the buds with the point of a knife or a V tool; plant it eight inches deep in the soil; cut out all of the buds as high above ground as you wish your limbs to appear on the trunk, say fifteen inches from the large end of the slip. They will never grow suckers or branches where the buds were removed.

I have two black Naples currant trees with their trunks two and a half inches in diameter, and their tops spread out five feet. I have red Dutch currant trees, fourteen inches from the ground to the lower branches; they are near the cherry currant patch, and my family, not knowing about them, took the fruit to show a customer a sample of cherry currants. They were very large indeed for red Dutch currants.



RED DUTCH CURRANTS.

Photographed by John Ahern, 175 Mil. Av., Chicago.

HOW TO TRIM.

I first seek out the oldest branches. You can readily see if they show signs of decay, or have limbs broken or dead. Cut them close to the ground. You will often find them hollow, a worm having gone through the center of it. Take all limbs that lie horizontal near the ground; leave ten limbs in a bush that shows great thrift, but only seven otherwise; cut out of the center of the bush so that the sun can shine through; then you will raise fruit, not wood.

WHEN TO TRIM CURRANT BUSHES.

I prefer the last of August or the 1st of September, when the leaves are on the branches, and the slip full of sap; the wood mature; there is enough sap in the slip to heal over the lower end and be ready to throw out a multitude of fine roots all around the slip. Many people suppose the roots come from the buds, but these will notice that the suckers spring from the buds only, and the slip has a large number of fine roots all around.

I have taken off slips in August and any time in fall or winter, or early in spring, before the buds start to grow.

In the fall put a scoop-shovelful of manure around each bush; also give them a liberal top-dressing of manure; spade it in so as not to disturb the roots. A pick with rounded edges is the best to work with in loosening the ground near the roots; it will not cut them.



Black Naples Currant Tree.

CURRENT ENEMIES AND HOW TO DESTROY THEM.

The currant has three enemies, which in some localities are very destructive. One of them, called the currant worm, is about an inch long, and yellow in color, dotted with black spots; another is known as the currant borer; he gets inside of the stalk; often starts near the ground, and makes the stalk hollow nearly the entire length; sometimes he gets inside a new and tender branch, near the top of a bush. Remedy.—Make a strong soap-suds, using whale-oil soap; put into it about two teaspoonsful of crude carbolic acid. It is the better way to cut the stalk away and burn it. One more enemy claims our attention—the little green lice; give them a shower of whale-oil soap-suds and carbolic acid with a syringe. It kills every time.

Spiced Currants. Take four quarts of currants deprived of the stems, one pint of vinegar, two pounds of crushed sugar, one teaspoonful each of allspice, cloves, and cinnamon powdered fine; boil all together until about the consistency of jelly; then remove from the fire and put away in closely covered jars for use.

BLACK NAPLES CURRANT.

A very few people know the value of this currant or its medicinal qualities. One of my customers who has a large number of children ordered a bushel, because they were excellent for dysentery. They cure sore throat and nursing sore mouth. They sell readily for \$4.00 per bushel, when the red sell for \$2.00. Black currant jam, a tablespoonful in a goblet filled with water, makes one of the very best drinks in warm seasons; it is an excellent beverage for the sick room.



LEE'S PROLIFIC BLACK CURRANT.

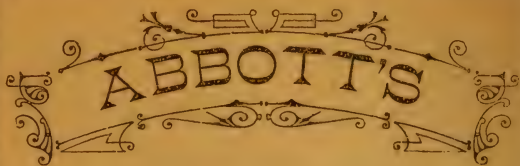
The best black sort in cultivation. Berries VERY LARGE, best quality; a vigorous grower and immensely productive. The plants and fruit are entirely exempt from attacks of the Currant Worm or any other insect. The fruit will hang on the bushes a long time. "We have grown to like our Black Currants very much. Stewed (when ripe) and sweetened; stewed after being dried in sugar, made into preserves or jelly or canned, they are delicious. No other fruit has that peculiar delicacy of flavor."

How to Pick Black Currants Rapidly.

Persons having a large quantity of black currants to harvest, know how tedious it is to pick them; the stems are so very short that it does not pay to take them from the bush. In years past I could make more money growing red Dutch currants as \$2 a bushel than the black Naples at \$4. This present year, 1887, I have tried a plan which is a success! Make a frame two feet wide and three feet long of strips of board, let the strip be two inches wide and one inch thick; get some canvass or Burlap, will cost about 8 cents a yard, tack it on one side. Place two frames opposite each other close to the bush with canvass side down; let the the fingers work lively, making every currant fall on the canvass below, empty in a box or basket. A large number of leaves will fall with the currants. To separate the leaves, take a sieve with the mesh a half inch, which will let the currants fall through and retain the leaves; the sieve should be concave, the currants will find their way out of the sieve more speedily.

How to Trellis Currant and Gooseberry Bushes, Raspberry and Blackberry Canes.

Black currants if planted six feet apart, will cover the whole space of ground around them; the foliage is too heavy if they are not trimmed and cut back freely. The advantage of a trellis for the above bushes and canes is five fold. It gives ample space to walk among the bushes, lets sunlight to every part of the bush at once, ripens the fruit more evenly, the lower fruit at the same time with that higher up; it holds the bush steady to pick the fruit; it brings every limb within easy reach of the pickers, with no other limb in the way while picking the fruit. Take two plaster laths, bore a quarter inch hole one and a half inch from each end; then bore holes four inches apart the entire length of the lath; pieces of lath from fifteen to twenty-four inches in length for raspberries and blackberries because of less number of strands than currants and gooseberries; then take wire, such as is used in baling hay, bend it double in the form of a letter T, bring the limbs into line by putting a lath each side, put the wire through the holes and press the laths together so as not to clamp too tight on the limbs; then bend back the two ends of the wires.



ABBOTT'S

Horticultural Leaves

GOOSEBERRIES.



CHICAGO, ILL.

How to Cultivate Gooseberries.

In England and Scotland they raise a much larger gooseberry than we can. The climate and the salt atmosphere are very favorable to that fruit. I never have mildew on my fruit. I met with a gentleman from Dupage County, Ill., who informed me how to prevent mildew on gooseberries. He says: Do not put on brine, as I did, and kill them. He was the first to introduce them into that county from Scotland. The gooseberry can be pruned to a single stem with more safety than the currant, as the borer does not trouble them. The wood does not ripen as early as the currant. For that reason I prefer to bank up the bush in the manner described in the article, "To put Roots on the Slips Before They are Cut from the Bush." In the bush form, as the wood becomes old, cut it out, and let only three or four stems remain. You will then have a large root to a small top. As they grow in size, thin out, so that sunlight and air can pass freely through the bush. In banking up around the bush I find the roots grow upon the old wood much more rapidly than upon the new wood. If the gooseberry is infested with the currant worm, make a soap suds with whale-oil soap, and put in crude carbolic acid, two teaspoonfuls to the quart of water; it is sure to kill. Be sure and mulch with coarse manure and any vegetable matter. It pays well to give them good attention in the way of cultivating the soil around them. I raise the large English and Houghton Seedling varieties; both are very prolific.

I have raised the large English one and one-fourth inches long and fifteen-sixteenths of an inch in diameter. The cut here is about the average size of the berries when well cared for, supposed to be one and one-eighth inches long and seven-eighths in diameter.

HOW TO TRANSPLANT.

Throw out the earth until you have a hole sufficiently large to receive the roots as they naturally grow in a row. Wet the roots, place the plant in the right position; be careful to place all fibrous roots in their natural position. Then with your coal-sifter or some other coarse sieve put the fine earth around them, pour in some water, put in more good soil mixed with good stable manure, and press down the soil with the feet.

HOW TO PROPAGATE FROM SLIPS.

Cut off slips of the past year's growth in September or October; dig a trench two and a half or three feet wide, and fifteen to eighteen inches deep place alternate layers of manure and soil; then fork it over thoroughly, mixing it together; then with the Abbott Slip Transplanter put them in from six to eight inches deep; spread common mortar-sand upon the bed; take a watering pot with the sprinkler off, pour the water from the pot held about four or five feet from the ground to wash the sand solid around the stem.

HOW TO PUT ROOTS ON THE SLIPS BEFORE THEY ARE CUT FROM THE MAIN BUSH.

Bend up a tube of tin or sheet iron so as to leave a half-inch space around the main stems; then bank up in six or eight inches, and in the late fall cut them off from the main bush.

The propagation of the gooseberry is about the same as the currant—deep cultivation of the soil, well fertilized, and strict and careful pruning. The gooseberry bush soon attains a large size, and the secret of raising large berries lies in the fact of

pruning down to one stem. If you are a nurseryman and want to propagate, you will want the suckers to grow; but if, on the other hand, you want to raise large fruit, observe the item entitled "How to Raise Gooseberry Trees."

If you do not wish to propagate, cut out all of the suckers that start in the spring. As the slips do not take root as readily as the currant, I think that layering is preferable if one is in any haste to get the slips rooted.


Varieties: Large English, Houghton Seedling, Downing, and Smith's Improved.

HOW TO RAISE GOOSEBERRY TREES.

Take the largest slips; cut out all the buds sixteen inches from the large end; plant them about six or eight inches deep in the ground. They will grow a tree with a single stock, and never sprout up from the roots.

HOW TO PREVENT MILDEW ON GOOSEBERRIES.

Make a very strong brine with salt and water; pull some grass and give a thorough soaking in the brine; then lay it out and dry it; when the berries appear dig around the bush; then spread the grass under the bush, and when the moisture evaporates it passes up through the salt grass, makes a salt air the same as in its native home in England, Scotland and Germany. This has been found to prevent mildew in the West.



ABBOTT'S

Horticultural Leaves

GRAPES.



CHICAGO, ILL.

Branch 20 inches. Weighing 7
pounds. Exhibited at meeting of
Am. Pom. Society, Rochester N. Y.

THE PRENTISS.

From a Photograph by
G. W. Godfrey.



How to Cultivate Grapes.

When we take into consideration the bountiful return that the grape bestows for the labor and care used in its cultivation, it is surprising that people neglect this important branch of horticulture, they will get cherry, apple and pear trees, currant, gooseberry, raspberry bushes, and almost, if not wholly, neglect the cultivation of the grape, which yields such large and beautiful clusters of fruit. These trees and bushes take up a large space, while the grape takes comparatively little. A person having an extra lot connected with his homestead can raise several bushels of delicious fruit, and trellis upon the fence around the lot, behind a row of currants or other fruit bushes. The only word I can use to explain this matter is *ignorance*; the want of knowing how to manage, prune and care for the vine. Do not people love grapes? Are they not sold by thousands of boxes and baskets on South Water Street, and the peddler stands at our street corners, and beside the store fronts and curbstones of all our great thoroughfares? There would be much less sickness in the family if all of its members, parents and children, would partake more freely of this health-giving fruit.

WHAT PLACE IS MOST FAVORABLE FOR RAISING GRAPES?

A southwestern slope is considered the best, all things considered. In the time when frosts appear the ground is more warm and less liable to be affected by the frost. Hardy grapes will grow in almost any locality.

HOW TO TRANSPLANT.

Dig a trench two feet deep, fill it a third full of heads and bones of cattle or other animals, sift in among the bones rich, fine soil, plant the vine up, against a brick building; if a frame, make a trellis off from the side of the building so as not to injure the wood-work. Train up the vines, put some well rotted cow manure in with the soil near the surface. The roots will run in through the bones. The vines will bear bountifully for several years. Fertilize with good, well-rotted stable manure.

WHAT SEASON TO PLANT GRAPES.

The plants should be set in the fall or very early in spring, before the buds start, as there is danger of breaking off the buds.

WHAT SEASON TO PRUNE GRAPES.

The autumn, as soon as the leaves are off; or it may be done in winter or very early in the spring, or when the sprouts are about three inches long in summer.

HOW TO PRUNE GRAPE-VINES.

If you wish a good crop of fruit the next year, cut back all of the last year's or new growth, leaving three buds. In summer, when the sprouts are about three inches long, take off all that do not show blossoms or signs of fruit. In August cut off the tops of the stock canes eight feet high; that will cause the grape to ripen early.

HOW TO TRELLIS GRAPE-VINES.

I have spoken of one plan. Some people set cedar posts, stretch wires from one to another. The vines stand once in six feet, or six feet apart. A great bristly head shows itself on the vine about three feet from the ground, and tied up to the wire. The new wood is cut back to this point every year. Another way is to set cedar posts six feet apart, and coil the vine around the post, which is seven feet high.

ANOTHER PLAN FOR A TRELLIS.

Have a trellis with three or more uprights, about eight feet high, and four lateral bars, the upper to be eight feet from the ground, the lower eighteen inches high; divide the remaining space between the middle bars equally. Let the vine have two branches; train one to the right and one to the left on the lower bar; train uprights as shown by the cut of the Prentiss grape. The branch here represented is the left-hand branch. You will see that all the branches trained up perpendicular have been cut back to three buds, and consequently three clusters of grapes from each stem; when these branches get strong cut back all of the upright branches to three buds. I have practiced for several years a method of starting a new vine. I dig a trench a foot wide and sixteen inches deep, six feet long, lay down a branch in this trench; let it be attached to the parent vine. In this way you will secure great root power. In starting to plant a new vineyard, plant the rows eight feet apart, and when the vines are three years old dig the trench four feet to the center between the rows; if you have a long vine, lay it also in this trench, and return it to the same point on the old

vine that you started from. In this way you secure very great root power. Grapes sometimes fall from the vine. The cause of this is a want of sufficient nourishment; there is not sap enough to support the grape while ripening. They need more length of roots or more root power.

THE SINGLE POLE OR STAKE SYSTEM

I have practiced for several years. I coil two or three branches of the vine. Some people call it spurring down. I make the coils two feet in diameter, and from buds near the stake leave three or four buds to grow the canes for bearing fruit another year, and tie them to the pole as they increase in length. Vines coiled in this way ripen their fruit much sooner than those on a high trellis. Let the coil be fifteen inches from the ground.

HOW TO PREVENT MILDEW.

With a bellows blow powdered sulphur on when wet.

WHAT ENEMIES HAVE GRAPES?

Worms and lice. Remedy: Take whale oil soap-suds and crude carbolic acid, two teaspoonfuls to a quart of water.



Horticultural Leaves

RASPBERRIES.



CHICAGO, ILL.

How to Cultivate Raspberries.

The red raspberry is a native of a northern climate. In the month of May, 1864, I went to Lake Superior and was employed as Chief Engineer for the Isle Royale Mining Company. I found the red raspberry growing in great abundance from Marquette to Ontonagon. After being employed by the Mining Company one year, I afterward traveled over that whole region as traveling agent for the sale of machinery for the Crane Bros. Company. I found the red raspberry everywhere as the principal fruit. It will be a long time before I forget how I enjoyed raspberries and cream. Mr. Church, a merchant of Sault River, put up twenty tons of raspberry jam in one year. The Indians picked the berries. He bought his sugar at wholesale in New York or Boston. He found a ready sale for it among the tourists who visit that region in summer.

PREPARATION OF THE SOIL AND FERTILIZERS.

A rich, moist loam is well adapted to the raspberry. My soil is a stiff, cold clay, but I get abundant crops of both red and black varieties. See that you have good drainage. Prepare the soil as for corn. Rake up all the leaves you can find in the fall; mix barn-yard manure, leaves, and add a layer of good soil or clay for a compost heap. Do not waste a table-spoonful of soap-suds; turn it all upon the compost heap. Throw upon it any vegetable matter; always cover with a little soil. Shovel over the heap occasionally to let the frosts of winter have a good hold upon it. This compost is good for almost everything raised in the garden.



The Hansell.

Mulch with coarse manure. All of the weeds should be thrown around them and other bushes and trees; let nothing of a vegetable nature be lost. I often get barn-yard manure green in the fall, and take as many loads of soil, lay alternate layers of each, add all of the vegetables I can accumulate, then fork it over several times and mix it thoroughly.

PLANTS AND PLANTING.

The Turner stands the winter well with me, bears an abundance of fruit uniformly of good size; a very sweet family berry.

Red Philadelphia.—Always prolific; an excellent flavor. The canes stand the cold winter; but to raise for the market the berries are small and are not good for shipping.

Brandywine.—For a berry for field cultivation and shipping it has no equal among the reds. Grows well at the South.

Cuthbert.—This raspberry originated near New York City in the garden of a man named Cuthbert, and was given by him to a well-known horticulturist for a more complete trial. William Parry says: "We are pleased with the Cuthbert. It is a

strong, vigorous grower; appears perfectly hardy; very productive; large fruit, of a red color, and continues late in bearing."

Hansell.—A new berry; originated in Burlington County, N. J. It was ripe in 1880, June 4; in 1881, June 12. Description: Fruit, medium to large; nearly as large as the Cuthbert; color of the brightest crimson; canes vigorous, productive, and entirely hardy. Planting should be done in the fall. October and November are the best months to plant raspberries; they will bear much more fruit the following season. The buds in spring start very early, and are in danger of being broken off in planting. I transplanted a large number of raspberries in the middle of August, 1884, with my Transplanting Trowel, and not a leaf withered. For garden culture the plants can stand three feet apart each way; field culture, rows four feet apart and three feet in the row.

PROPAGATION.

In the month of August you will notice the tips of the vines enlarge and have a very tender and fresh appearance; this is the very time to propagate. If the tip touches the ground it takes root. I bend down the cane a little, cover the tip with soil, lay a lump of clay upon the cane to hold it down. The cane often grows a foot in length. I put soil on different spots, and I often get half a dozen vines from one tip. In the month of August I cut out all of the weaker canes or suckers, and let three or at most four of the new canes remain; those that remain grow more stocky. After the fruit is picked I immediately cut out the old canes. The green leaves and old canes absorb, and take some of

the sap from the new canes. Cut the old canes close to the ground. In the month of August those plants from which I wish to get an abundance of fruit I cut back to about four feet high; they will throw out lateral branches and produce more fruit. Those from which I propagate I cut back the same length after the tips take root. Let the stem on the tip be about eight inches long. Don't try to raise fruit by cutting the tip long the first year of the infant plant. I save all of my old canes to cover my strawberry beds for the winter; spread them upon the bed, then scatter leaves over them, and the strawberries will come out in the spring as green as Erin's Isle.

CULTURE OF THE FRUIT.

Keep out grass and weeds; be sure and mulch the plants, especially from May to July, lest your berries be small or dry up. It is a good plan to cover the spaces between the rows with a heavy mulch of leaves or any coarse vegetable matter. In early spring spade deeply between the rows, taking care and not go near the roots of the plants; then the mulch will keep the ground moist; it also keeps weeds from growing. In October dig in this mulch, and your soil is improved every year. I prefer the month of August for pruning the raspberry; the cane has ample time to throw out lateral branches and grow more stocky. I notice one cane treated in this way often produces as much fruit as two pruned late in fall; the fruit is much greater in size. I can take up the tips at any time after they have taken root with the Abbott Transplanting Trowel. It will be better to leave the young plants where they are until spring if you have no trowel; they will grow if

they are not disturbed. If they are transplanted late in the fall without the soil taken with them the frost may throw them out. The red varieties throw up many suckers; take these off from June to August; take up with care and leave all the soil upon them that you can, if re-planted in your own garden. If you wish to ship plants through the mail, these come in a year ahead of the tips. I have a yellow raspberry that is as sweet as honey; canes very large; produces well; stands the coldest winter well. I suppose it to be the Yellow Antwerp.



ABBOTT'S

Horticultural Leaves

STRAWBERRIES.



CHICAGO, ILL.

How to Cultivate Strawberries.

SOIL AND SITUATION.

There are so many varieties of every kind of small fruit that it is nearly impossible to lay down the same rule for all of them, but we will endeavor to strike a general average. The soil adapted to many kinds of strawberries is a deep, moist, sandy loam, with a plenty of sunlight and pure air. The strawberry thrives on moist land; not wet, undrained stagnant soil, but on underdrained, or, like my own bed, near a ditch four feet deep, upon what is now my sales ground. I have a space 25x125 feet, the size of a common house lot. Along one side and across one end I had Houghton Seedling gooseberries, the other side Davidson Thornless raspberries; across the other end a row of black Naples currants; inside of these a row of Philadelphia raspberries, one gooseberry and three Lawton blackberry bushes, one apple tree four years old. With the exception of the apple, these were all fruit-bearing bushes. Near the middle of the lot I had 150 young Davidson Thornless raspberry bushes. The remainder of the lot was covered with Wilson Seedling strawberries. I picked 290 quarts, a fraction over nine bushels. We sold 72 quarts for 10 cents per quart, equals \$7.20, and 218 quarts at 7 cents, equals \$15.26. We have here \$22.46 for strawberries, not to mention gooseberries, raspberries and currants. Let those persons who have a vacant lot take notice of this fact. Our soil with deep spading is nearly all clay.

PREPARATION OF THE SOIL.

For garden culture, get some old, well rotted cow manure if you can ; cover your plat three inches deep with this manure; spade it in to the depth of fifteen or eighteen inches, as the strawberry roots run to a greater depth than many persons suppose. It is very amusing to see people pay a great price for the Monarch of the West, or Big Bob, and then plant them in soil stirred to the depth of six inches, and expect to raise large strawberries. You will gain much by forking over the soil a second time, and thoroughly mixing soil and manure. It is much more profitable to prepare the soil right at the first operation, and not suffer with drouth from shallow cultivation. Avoid shade. If your plants run among the currant bushes, you get very large plants, providing the soil is rich, and very few large sized berries. Do not work the soil when it is wet. For a bed that has been long planted, I use hen manure and wood ashes. I often put them both together into a half barrel, fill up with water, and apply with the sprinkling pot with the sprinkler off. I have done this three times in spring, the last time just before they blossom. In using these fertilizers, I avoid filling the ground with weeds.

WHERE TO GET PLANTS.

I make it a rule to get the plants as near home as possible, and in the same climate. If they cannot be procured near home, do the best you can abroad.

WHAT KINDS TO PLANT.

Wilson Seedling, Charles Downing, Prouty, Crescent Seedling—mixed with some other variety; Sharpless, Big Bob; and there are many others.

Every garden should have two varieties of strawberries, early and late. In this way the season can be prolonged; every person knows that people are sorry to part with this delicious fruit when the plants cease to bear July 4th. The Crescent Seedling is one of the most productive of the whole list; it is a pistillate, and should always be planted near some other sort that contains both stamens and pistils. The pistillate are strong growers, and heavy producers if fertilized by flowers of another variety; the two varieties should be within ten feet of each other. I have the Crescent Seedling, Charles Downing and the Wilson Albany all mixed up, a foot apart, and they give an abundant crop. The Wilson is the standard berry for shipping.

Monarch of the West.—Fruit enormous, holds its size well to the last; has a fine flavor, very good for home use, a trifle soft for shipping.

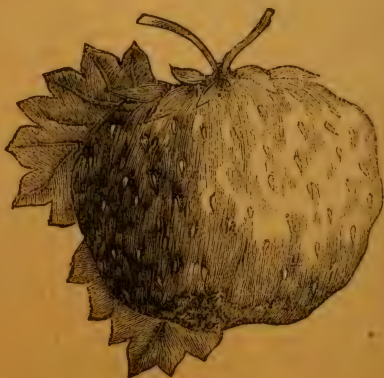
Charles Downing.—One of the best varieties; fruit large and abundant; it is extremely vigorous, hardy and productive; does well in any soil; good for home use.

Big Bob.—It is claimed to be one of the best; it has not been introduced very commonly as yet. The originator says: I will grow Big Bob and get fruit in great abundance; richer color, larger average and vastly superior in quality to the Sharpless, which I believe to be accepted as the standard among big berries. It ripens about the same time as the Wilson. Our Wilsons give us usually the first box June 3, and last box July 3.

HOW TO PLANT.

Take the Abbott Transplanting Trowel; plant any time when you can put a spade into the soil. I have

planted with the best kind of success in December, just before the ground froze up. I do it every month—spring, summer, fall or winter. I have done it in January with the trowel. I make the rows for garden culture about two feet apart, and one foot apart in the row. If you wish to raise fruit, cut the runners, keep out the weeds, give a top dressing of hen manure and wood ashes, one shovelful of ashes and manure and five or six of black soil; do this in July and August. I water in early spring—sometimes take any manure soluble in water, put in a tub or half barrel; stir up; take two thicknesses of coarse matting and strain it; this prevents getting grass or hayseed into your patch. I plant in early spring, then after the fruit is gone. I have planted in December, and the frost did not heave them out; I had a beautiful crop the following summer.



"Big Bob."

THE BLACKBERRY.

ITS CULTIVATION, SOIL AND SITUATION.

Light, warm land is preferable to very damp and heavy soil. If these are used the wood does not ripen fully and will winter-kill; for the same reason the land should not be too rich. Deep plowing is of great advantage, less liable to suffer from drought. It often succeeds well on high gravelly knolls, but if on such lands, it should be mulched. I have seen wild Blackberries growing in northern Illinois in an opening on the edge of the forest, in a very vegetable soil, composed largely of decayed leaves, the fruit hung in beautiful clusters.

For field culture set the plants in rows six feet apart, and three feet distant in the rows; for garden culture place the rows four feet apart and three feet space in the rows. I prefer fall planting for Blackberries, and, in fact, almost every bush and vine in the garden. When the tender shoots intended for fruit next year attain the height of four feet, clip them off the same as the Raspberries; they will then throw out lateral branches, which will bear the largest berries. The old canes that bear fruit this year, can be cut out as soon as the fruit is gathered. For winter protection see article entitled "A winter over-coat for plants, shrubs and vines."

ERIE BLACKBERRY

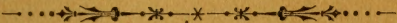
Is a chance seedling that sprang up in northern Ohio, near Lake Erie, and was named at the suggestion of Hon. M. P. Wilder, President of the American Pomological Society. "The *Erie* seems to fill in every particular, the demand for an entirely hardy Blackberry, producing *large fruit*; and in the ten years this variety has been tested it has not developed a single weakness. The canes are not only of ironclad hardness, never having failed to produce a crop of fruit, but of the strongest growth, free from "rust" and all other diseases, and wonderfully productive. The robust canes are borne to the ground with the weight of fruit. The fruit is not only of the largest size, excelling the Wilson, Kittatinny or Lawton, excellent quality, handsome and fine, but ripens exceedingly early, just after Early Harvest. The berries are almost round in form, very uniform in shape and size, scarcely any small or imperfect berries; hence, no other sort approaches the *Erie*, in appearance, when exposed in the crate, picked as it grows."

Matthew Crawford, of Ohio, one of the best authorities, says of the *Erie*: "My own opinion is, that when fully ripe it is as good as I ever tasted. It has not failed of a crop in seven years, while the Lawton and Kittatinny, growing near the *Erie*, have been winter-killed several times. I think there is a fortune in it for any man who can afford to grow it extensively for the fruit."


SNYDER BLACKBERRY.



A native of northern Indiana. A medium-sized berry, enormously productive; will not winter-kill; has no sour core; has less thorns than the Lawton; is the most reliable of the common high Blackberries.

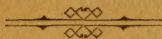


EVERGREEN BLACKBERRY.



The above named Blackberry was brought to Oregon from the South Sea Islands a few years ago, and is found to be the most hardy of all the Blackberry family. It stands the winters well in Oregon, sometimes the mercury goes below zero several degrees. The third or fourth year it will bear a bushel of berries to the single plant. The berry is about the size of the Lawton. The third year after the vines have ripened their fruit, they should be cut back. The vines should be spread out like a fan and tied to stakes. These canes should be cut back every year and should not be over ten feet high, for the convenience of picking.

BLACKBERRIES.



THE LUCRETIA DEWBERRY is the largest in size of any of the Blackberry family. In size and earliness it equals any of the high Blackberries. This is one of the low-growing, trailing Blackberries. It is very hardy, healthy and very productive; it has large, beautiful flowers. The fruit is often one and one-half inches long, and one inch in diameter. Its fruit is sweet and delicious, with no hard core. Matthew Crawford of Ohio says: "I have fruited the Lucretia Dewberry two years, and am satisfied that it is all that is claimed for it." It will run over a stone-heap, or on a trellis; if trailing near the ground, coarse mulch should be used to prevent the fruit from being soiled.



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LUCRETIA DEWBERRY.